

WHAT IS CLAIMED IS:

1. A printing apparatus for printing an image on a printing medium while relatively moving a printing head provided with a plurality of printing elements and the printing medium characterized by comprising:

detection means capable of moving along with said printing head relative to said printing medium for detecting image printed on said printing medium; and

control means for controlling said printing head according to a detection result of said detection means.

2. The printing apparatus as claimed in Claim 1, wherein said printing head and said detection means can be mounted on a carriage relatively moving to said printing medium.

3. The printing apparatus as claimed in Claim 2, wherein said printing head is replaceably mounted to said carriage, and said detection means is mounted fixedly on a predetermined position of said carriage.

4. The printing apparatus as claimed in Claim 2, further comprising:

moving means for moving said carriage in a primary scanning direction; and

transportation means for transporting said printing medium in a secondary scanning direction crossing with said

primary scanning direction.

5     The printing apparatus as claimed in Claim 2, wherein said plurality of printing elements of said printing head are arranged in a direction crossing with said primary scanning direction when said printing head is mounted on said carriage; and

10         said detection means has a plurality of detection elements arranged in a predetermined position of said carriage so as to be along by a specified direction crossing with said primary scanning direction.

15     The printing apparatus as claimed in Claim 1, wherein said detection means detects printed pixels printed by at least two of said plurality of printing elements; and

20         said control means controls drive timing of said plurality of printing elements according to a difference in detection time of at least two printed pixels by said detection means.

25     The printing apparatus as claimed in Claim 1, wherein said detection means is movable with a plurality of printing heads, and provided commonly to said plurality of printing heads so as to detect images printed by said respective plurality of printing heads; and  
       said control means controls said plurality of printing heads according to detection results of said detection

means.

8. The printing apparatus as claimed in Claim 1, wherein  
said detection means has a light source for irradiating  
5 light to said printing medium and a photoelectric  
conversion device for receiving reflected light from said  
printing medium.

9. The printing apparatus as claimed in Claim 1, wherein  
10 said printing head is an ink-jet printing head provided  
with a plurality of printing elements capable of ejecting  
ink.

10. The printing apparatus as claimed in Claim 9, wherein  
15 said printing elements of said ink-jet printing head have  
electrothermal converters for generating thermal energy  
as ink ejection energy.

11. A printing method for printing an image on a printing  
20 medium while relatively moving a printing head provided  
with a plurality of printing elements and the printing  
medium characterized in that:

an image printed on said printing medium is detected  
by detection means moving along with said printing head  
25 relative to said printing medium; and

said printing head is controlled according to a  
detection result of said detection means.